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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,258	12/01/2003	Hsin-Ming Chen	TOPP0003USA	1257
27765	7590	05/18/2005	EXAMINER	
NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)			CHOWDHURY, TARIFUR RASHID	
P.O. BOX 506			ART UNIT	PAPER NUMBER
MERRIFIELD, VA 22116			2871	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,258

Applicant(s)

CHEN, HSIN-MING

Examiner

Tarifur R. Chowdhury

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 12-16, 21 and 22 is/are rejected.
- 7) ☒ Claim(s) 7, 11 and 17-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 5 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a pixel array and a transparent conductive layer, does not reasonably provide enablement for a contact plug connecting the pixel array and the transparent conductive layer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

For examination purposes it is assumed that the transparent conductive layer is connected to the drain electrode through a contact hole.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 6 and 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Takaochi et al., (Takaochi), USPAT 4,776,675.**

7. Takaochi discloses and shows in Fig. 3, a color filter structure of a liquid crystal display (LCD) comprising:

- a glass substrate (4);

a plurality of color filters (1) coupling with each other on a surface of the substrate;

wherein an overlapping region exists between any two neighboring color filters, and each overlapping region and the color filters outside the overlapping region are coplanar.

FIG. 2

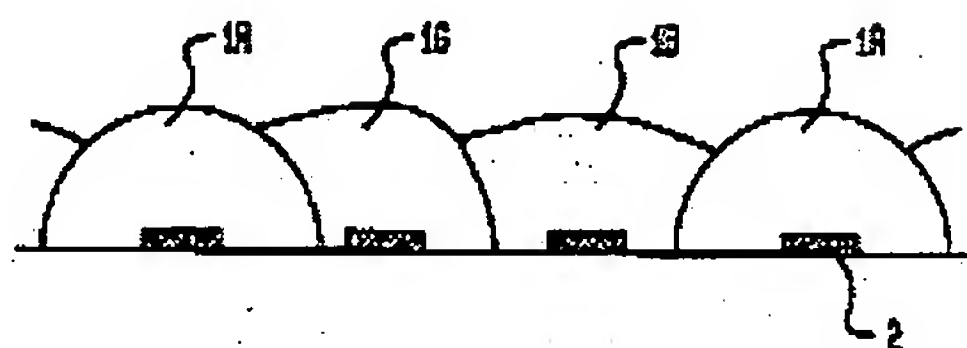
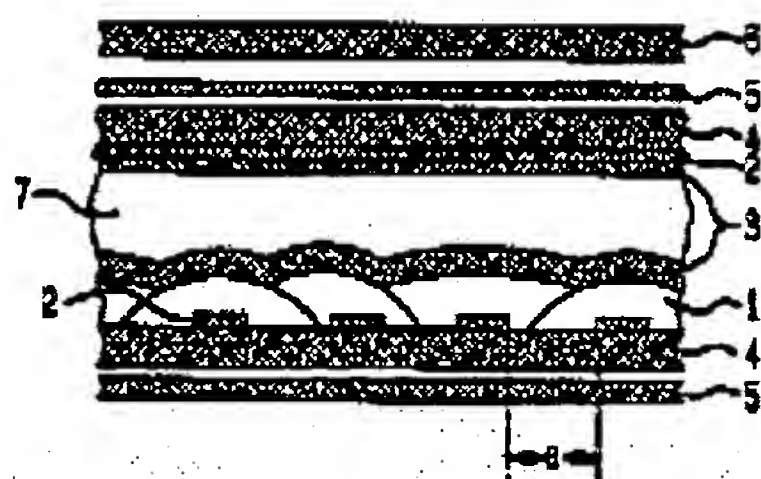


FIG. 3



Accordingly, claims 1 and 6 are anticipated.

As to claims 10 and 12, Takaochi shows in Figs. 2 and 3 that the color filters (1) comprising at least a red color (1R), a green color (1G) and a blue color (1B).

As to claim 13, the method for forming the color filters structure of a liquid crystal display (LCD) merely recites the step of forming each element and since element must be formed to make the device, the method for forming would be inherent to the device.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takaochi as applied to claims 1, 6 and 10-13 above and in view of Yamazaki et al., (Yamazaki), USPAT 6,093,934.

10. Takaochi discloses (col. 5, lines 15-19) that the liquid crystal display disclosed can also be used as an active matrix liquid crystal display wherein a thin film transistor is formed on a glass substrate. Takaochi differs from the claimed invention because he does not explicitly disclose that the thin film transistor is a low temperature polysilicon TFT.

Yamazaki discloses that a low temperature polysilicon TFT is advantageous in that a glass substrate can be used which is inexpensive and can easily be increased in size (col. 1, lines 38-40).

Yamazaki is evidence that ordinary workers in the art would find a reason, suggestion or motivation to use a low temperature polysilicon TFT.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a low temperature polysilicon TFT in the LCD of Takaochi for advantages such as using a low cost substrate that can be easily increased in size and thus reduce the cost of the display, as per the teachings of Yamazaki.

Accordingly, claims 2 and 14 would have been obvious.

11. Claims 3-5, 8, 9, 15, 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takaochi as applied to claims 1, 6 and 10-13 above.

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12. As to claims 3 and 4, As to claim 4, Takaochi discloses (col. 5, lines 15-19) that the liquid crystal display disclosed can also be used as an active matrix liquid crystal display wherein a thin film transistor is formed on a glass substrate and the color filter is formed on the TFT substrate and thus it is clear that the LCD is a color filter on array (COA) LCD. Takaochi further discloses and shows in different embodiment that a transparent conductive layer is formed over the color filter and thus a device in electroconductivity can be eliminated and the patterning can be made easy (col. 3, lines 60-66). Therefore, it would have been obvious to one of ordinary skill in the art to form a transparent conductive layer over the color filter to obtain a device free from electroconductivity.

As to claim 5, a typical structure for an LCD device wherein a color filter is formed on the TFT substrate and a pixel electrode is formed over the color filter, the pixel electrode is connected to the drain electrode of the TFT through a contact hole and thus the limitation such as the transparent conductive layer and the pixel array are connected would have been obvious to obtain an operative device.

As to claims 8, 9, 21 and 22, even though Takaochi does not explicitly disclose that the overlapping region serves as a black matrix he shows and discloses that the neighboring color filters overlap each other. Further, Takaochi also does not explicitly disclose that the substrate further comprises a black matrix layer positioned between any two neighboring color filters. However, it is common and known in the art to form a black matrix between two neighboring color filters in order to prevent light leakage current. Further, BM pattern has been omitted from the CF substrate to reduce process

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cost and an overlapping portion of adjacent color elements on the CF substrate has replaced the light blocking area. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to either form black matrix layer between two neighboring color filters in order to prevent light leakage current or use the overlap region of the color filters as the black matrix region in order to reduce process cost.

As to claims 15 and 16, using a mask having a transparent region and a translucent region to define patterns of the color filters is common and known in the art and thus would have been obvious to reduce fabrication process time and the complexity of processing a color filter.

Allowable Subject Matter

13. Claims 7, 11 and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R. Chowdhury whose telephone number is (571) 272-2287. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRC
May 06, 2005



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER